

PATENT COOPERATION TREATY
PCT
INTERNATIONAL SEARCH REPORT
(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 913453-58PCT	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below
International application No. PCT/CA2005/000250	International filing date (<i>day/month/year</i>) 07 February 2005 (07-02-2005)	(Earliest) Priority date (<i>day/month/year</i>) 06 February 2004 (06-02-2004)
Applicant CANADIAN BLOOD SERVICES ET AL		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of:
- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
- b. ☒ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I
2. ☐ **Certain claims were found unsearchable** (see Box No. II)
3. ☐ **Unity of invention is lacking** (see Box No. III)
4. With regard to the **title**,
- ☒ the text is approved as submitted by the applicant
- ☐ the text has been established by this Authority to read as follows :

5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant
- ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the drawings,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1
- ☒ as suggested by the applicant
- ☐ as selected by this Authority, because the applicant failed to suggest a figure
- ☐ as selected by this Authority, because this figure better characterizes the invention
- b. ☐ none of the figures is to be published with the abstract

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material

☒ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☒ on paper

☒ in electronic form

c. time of filing/furnishing

☒ contained in the international application as filed.

☐ filed together with the international application in electronic form

☒ furnished subsequently to this Authority for the purposes of search.

2. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been

filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments :

The electronic form of the sequence listing was not provided at filing, therefore, the search of the nucleotide sequences of the invention is based on the sequences found in Tables 1 and 2 which correspond to SEQ ID NOs 1 to 36.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2005/000250

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7): C07H 21/00, C12Q 1/68, C07H 21/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(7): C07H 21/00, C12Q 1/68, C07H 21/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)

Delphion, Pubmed, Biosis, Caplus and GeneSeq (searched sequences SEQ ID NOs 1 to 36)

Keywords: single nucleotide polymorphisms, primer, amplification, antigen, blood group, rare, genotype, multiplex, tag-array, platelet.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/32702 A2 (DRK BLUTSPENDEDIENST BADEN-WUERTTEMBERG GMBH [DE/DE]) 10 May, 2001. (See PCR primers ga41, ga42 and re84 and pages 56 and 57)	1 to 5, 8 to 10, 12, 28 to 33, 40 to 42 and 45
X	WO 00/20634 A1 (NOVA MOLECULAR, INC. [CA/CA] Montreal, Quebec) 13 April, 2000. (See PCR primer Pla 2-1 for human GPIIIa allele)	1 to 5, 8 to 12 and 40
X	WO 02/068684 A2 (PYROSEQUENCING AB [SE/SE] Uppsala (SE) or in US Lunderberg, J. [SE/SE] Stockholm (SE)) 6 September, 2002. (See pages 4 to 6, Example 2)	1 to 14, 16 to 25, 27 and 29 to 45
X	WO 02/30950 A2 (GENAISSANCE PHARMACEUTICALS, INC. [US/US] New Haven CT) 18 April, 2002	29 to 32
Y	(See page 19, lines 19-29)	1 to 27, 34 to 40 and 42 to 45

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

26 April 2005 (26-04-2005)

Date of mailing of the international search report

15 June 2005 (15.06.2005)

Name and mailing address of the ISA/CA
Canadian Intellectual Property Office
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HIRSCHHORN, J. N. et al., "SBE-TAGS: An array-based method for efficient single-nucleotide polymorphism genotyping", Proceedings of the National Academy of Sciences of USA, August 2000, Vol. 97, no. 22, pages 12164-12169. (Whole Document)	33 and 41
Y		1 to 27, 34 to 40 and 42 to 45
X	GRAF, S. et al., "Genotyping of HPA-1 (Human Platelet Antigen 1) by mini-sequencing", Blood. 16 November, 2000, Vol. 96, no. 11, Part 2, page 53b. (Whole Document)	29 to 32
Y		1 to 27, 34 to 40 and 42 to 45
X	GASSNER, C. et al., "RHD/CE typing by polymerase chain reaction using sequence-specific primers", Transfusion. October 1997, Vol. 37, pages 1020-1026. (Whole Document)	28
Y		1 to 27, 34 to 40 and 42 to 45
X, P	BORTOLIN, S., et al., "Analytical validation of the Tag-it high-throughput microsphere-based universal array genotyping platform: Application to the multiplex detection of a panel of thrombophilia-associated single-nucleotide polymorphisms", Clinical Chemistry. November 2004, Vol. 50, no. 11, pages 2028-2036. (Whole Document)	4, 9, 28 to 30, 32, 33 and 41
X, P	INAGAKI, S., et al., "A new 39-plex analysis method for SNPs including 15 blood group loci", Forensic Science International. 11 August, 2004, Vol. 144, pages 45-57. (Whole Document)	4, 9, 12, 28 to 33, 40, 41 and 45

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CA2005/000250

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
WO0132702	10-05-2001	AU1145501 A	14-05-2001
		CN1413219 A	23-04-2003
		EP1226169 A2	31-07-2002
		JP2003513620T T	15-04-2003
WO0020634	13-04-2000	AU773765 B2	03-06-2004
		AU5994999 A	26-04-2000
		CA2354544 A1	13-04-2000
		EP1117840 A1	25-07-2001
		JP2002526124T T	20-08-2002
		US6368797 B1	09-04-2002
		US2002119479 A1	29-08-2002
WO02068684	06-09-2002	AU5331198 A	17-07-1998
		DE69713386D D1	18-07-2002
		DE69713386T T2	30-01-2003
		EP0946752 A1	06-10-1999
		GB0104560D D0	11-04-2001
		GB9626815D D0	12-02-1997
		JP3533223B2 B2	31-05-2004
		US6258568 B1	10-07-2001
		US2003104372 A1	05-06-2003
		WO9828440 A1	02-07-1998
WO0230950	18-04-2002	AU1192002 A	22-04-2002